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PATENTS  
Docket No. PARAL-13 CON

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Willis et al.  
Application No.: 10/826,633 Confirmation No.: 1327  
Filed : April 15, 2004  
For : DIRECT MULTIPLEX CHARACTERIZATION OF  
GENOMIC DNA  
Group Art Unit : 1645

Mail Stop Amendment  
Hon. Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

TRANSMITTAL LETTER FOR  
INFORMATION DISCLOSURE STATEMENT

Sir:

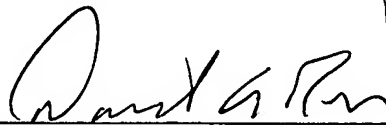
Transmitted herewith is an Information Disclosure Statement in the above-identified application. This Statement is submitted:

- ☐ [ ] within three months of the application filing date;
- ☒ [X] more than three months from the application filing date but before the mailing date of the first Office Action on the merits.

In accordance with 37 C.F.R. § 1.97, submission of this Statement requires no fee. However, if for any reason a fee is due, the Director is hereby authorized to charge payment of any fees required in connection with this

Information Disclosure Statement to Deposit Account  
No. 06-1075. A duplicate copy of this letter is  
transmitted herewith.

Respectfully submitted,



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Registration No. 47,904  
Attorney for Applicants

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Substitute for form 1449A/PTO

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

**Complete if Known**

Application Number	10/826,633
Filing Date	April 15, 2004
First Named Inventor	Willis
Art Unit	1645
Examiner Name	N/A
Attorney Docket Number	PARAL-13 CON

Sheet

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of

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**U. S. PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>2</sup> (if known)			
		us-2004/0146901	07-29-2004	Morris	
		us-2003/0104436	06-05-2003	Morris	
		us-6,852,487	02-08-2005	Barany	
		us-6,558,928	05-06-2003	Landegren	
		us-6,506,594	01-14-2003	Barany	
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		us-6,268,148	07-31-2001	Barany	
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		us-6,210,884	04-03-2001	Lizardi	
		us-6,187,575	02-13-2001	Sobek	
		us-6,183,960	02-06-2001	Lizardi	
		us-6,027,889	02-22-2000	Barany	
		us-5,981,176	11-09-1999	Wallace	
		us-5,952,176	09-14-1999	McCarthy	
		us-5,952,174	09-14-1999	Nikiforov	
		us-5,942,391	08-24-1999	Zhang	
		us-5,876,924	03-02-1999	Zhang	
		us-5,871,921	02-16-1999	Landegren	
		us-5,866,337	02-02-1999	Schon	
		us-5,854,033	12-29-1998	Lizardi	
		us-5,846,719	12-08-1998	Brenner	
		us-5,846,717	12-08-1998	Brow	
		us-5,843,669	12-01-1998	Kaiser	
		us-5,830,711	11-03-1998	Barany	
		us-5,763,175	06-09-1998	Brenner	
		us-5,719,028	02-17-1998	Dahlberg	
		us-5,679,524	10-21-1997	Nikiforov	
		us-5,660,988	08-26-1997	Duck	
		us-5,635,400	06-03-1997	Brenner	
		us-5,614,402	03-25-1997	Dahlberg	
		us-5,573,907	11-12-1996	Carrino	
		us-5,571,639	11-05-1996	Hubbell	
		us-5,541,311	07-30-1996	Dahlberg	
		us-5,494,810	02-27-1996	Barany	
		us-5,473,060	12-05-1995	Gryaznov	
		us-5,455,166	10-03-1995	Walker	
		us-5,426,180	06-20-1995	Kool	



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STATEMENT BY APPLICANT**

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First Named Inventor	Willis
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Attorney Docket Number	PARAL-13 CON

Sheet

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of

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**NON PATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
		ANTSON, et al, "PCR-Generated PadlockProbes Detect Single Nucleotide Variation in Genomic DNA", Nucleic Acids Research (2000) 28(12):1-6	
		BANER, et al, "Signal of Padlock Probes By Rolling Circle Replication", Nucleic Acids Research, (1998) 26(22): 5073-5078	
		BARANY, et al, "Genetic disease detection and DNA amplification using cloned thermostable ligase", Proc. Natl. Acad. Sci., 88:189-193 (1991)	
		BEAUCAGE, et al, "Deoxynucleoside phosphoramides", Tetrahedron Lett., 22: 1859-1862 (1981)	
		CHEE, "Enzymatic multiplex DNA sequencing", Nucleic Acids Research, 19: 3301-3305 (1991)	
		DOLINNAYA, et al, "Oligonucleotide Circularization By Template-Directed Chemical Ligation", Nucleic Acids Research (1993) 21(23):5403-5407	
		FAVIS, et al, "Universal DNA Array Detection of Small Insertions and Deletions in BRCA1 and BRCA2", Nature Biotechnology (2000) 18:561-564	
		FIRE, et al, "Rolling Replication of Short DNA Circles", Proc. Natl. Acad. Sci., (1995) 92:4641-4645	
		FODOR, et al, "Light-directed, spatially addressable parallel chemical synthesis", Science, 251: 767-773 (1991)	
		GADE, et al, "Incorporation of Nonbase Residues into Synthetic Oligonucleotides and Their Use in the PCR", GATA (1993) 10(2): 61-65	
		GERRY, et al, "Universal DNA Microarray Method for Multiplex Detection of Low AbundancePoint Mutations", J. Mol. Biol. (1999) 292:251-262	
		GRONOSTAJSKI, R.M., "Site-specific DNA Binding of Nuclear Factor I: Effect of the Spacer Region", Nucleic Acids Research (1987) 15: 5545-5559	
		KOZAL, et al, "Extensive polymorphisms observed in HIV-1 clade B protease gene using high-density oligonucleotide arrays", Nature Medicine, 2: 753-759 (1996)	
		LANDEGREN, et al, "A ligase-mediated gene detection techniques", Science, 241: 1077-1080 (1988)	
		LANDEGREN, et al, "Detecting Genes with Ligases", Methods (1996); 9(1): 84-90	

# NON PATENT LITERATURE DOCUMENTS (CONT.)

		LIZARDI, et al, "Mutation Detection and Single-Molecule Counting Using Isothermal Rolling-Circle Amplification", Nature Genetics (1998) 19:225-232	
		LONGO et al., "Use of uracil DNA glycosylase to control carry-over contamination in polymerase chain reactions," Gene, 93: 125-128 (1990).	
		NEEDHAM-VAN DEVANTER, et al, "Characterization of an adduct between CC-1065 and a defined oligodeoxynucleotide duplex", Nucleic Acids Research, 12:6159-6168 (1984)	
		NILSSON, et al, "Padlock Probes Revel Single-Nucleotide Differences, Parent of Origin and In Situ Distribution of Centromeric Sequences in Human Chromosomes 13 and 21", Nature Genetics (1997) 16(3): 252-255	
		NILSSON, et al, "Padlock Probes: Circularizing Oligonucleotides for Localized DNA Detection", Science (1994) 265:2085-2088	
		SHELDON, et al, "Matrix DNA hybridization", Clin. Chem., 39:718-719 (1993)	
		SHOEMAKER et al., "Quantitative phenotypic analysis of yeast deletion mutants using a highly parallel molecular bar-coding strategy," Nature Genetics, 14:450-456 (1996).	
		SOOKNANAN et al., "Nucleic acid sequence based amplification," Molecular Methods for Virus Detection, Wiedbrauk and Farkas, eds., Chapter 12, pp.261-285 (Academic Press, New York, 1995).	
		THOMAS, et al, "Amplification of Padlock Probes for DNA Diagnostics by Cascade Rolling Circle Amplification or the Polymerase Chain Reaction", Arch Pathol Lab Med. (1999) 123(12): 1170-1176	
		XU et al., "High sequence fidelity in a non-enzymatic DNA autoligation reaction," Nucleic Acids Research, 27:875-881 (1999).	
		ZHANG, et al, "Amplification of target-specific, ligation-dependent circular probe", Gene, 211:277-285 (1998)	

Examiner Signature		Date Considered	
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.



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Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

Pursuant to 37 C.F.R. §§ 1.56, 1.97 and 1.98,  
applicants hereby make the following documents of record in  
the above identified application:\*

U.S. Patent and Patent Publication Documents

US2004/0146901	07-29-2004	Morris
US2003/0104436	06-05-2003	Morris
6,852,487	02-08-2005	Barany
6,558,928	05-06-2003	Landegren**
6,506,594	01-14-2003	Barany**
6,458,530	10-01-2002	Morris
6,355,431	03-12-2002	Chee
6,268,148	07-31-2001	Barany**

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\* Applicants reserve the right to challenge the status  
of any of the cited documents as prior art.

6,235,472	05-22-2001	Landegren**
6,228,580	05-08-2001	Blumenfeld
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6,210,884	04-03-2001	Lizardi**
6,187,575	02-13-2001	Sobek**
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6,027,889	02-22-2000	Barany**
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5,952,174	09-14-1999	Nikiforov
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5,876,924	03-02-1999	Zhang
5,871,921	02-16-1999	Landegren
5,866,337	02-02-1999	Schon**
5,854,033	12-29-1998	Lizardi**
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5,635,400	06-03-1997	Brenner
5,614,402	03-25-1997	Dahlberg**
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#### Foreign Patents

WO 03/006677	01-23-2003	Oliphant**
WO 00/58516	10-05-2000	Fan
WO 00/55369	09-21-2000	Cox**
WO 98/04746	05-02-1998	Zhang**
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WO 90/01069	02-08-1990	Segev**
WO 89/12696	12-28-1989	Richards**
WO 89/09835	10-19-1989	Orgel**

Other Documents

ANTSON, et al, "PCR-Generated Padlock Probes Detect Single Nucleotide Variation in Genomic DNA", Nucleic Acids Research (2000) 28(12):1-6

BANER, et al, "Signal of Padlock Probes By Rolling Circle Replication", Nucleic Acids Research, (1998) 26(22): 5073-5078

\*\*BARANY, et al, "Genetic disease detection and DNA amplification using cloned thermostable ligase", Proc. Natl. Acad. Sci., 88:189-193 (1991)

\*\*BEAUCAGE, et al, "Deoxynucleoside phosphoramides", Tetrahedron Lett., 22: 1859-1862 (1981)

\*\*CHEE, "Enzymatic multiplex DNA sequencing", Nucleic Acids Research, 19: 3301-3305 (1991)

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\*\*KOZAL, et al, "Extensive polymorphisms observed in HIV-1 clade B protease gene using high-density oligonucleotide arrays", Nature Medicine, 2:753-59(1996)

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LONGO et al., "Use of uracil DNA glycosylase to control carry-over contamination in polymerase chain reactions," Gene, 93: 125-128 (1990).

\*\*NEEDHAM-VAN DEVANTER, et al, "Characterization of an adduct between CC-1065 and a defined oligodeoxynucleotide duplex", Nucleic Acids Research, 12:6159-6168 (1984)

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\*\*SHELDON, et al, "Matrix DNA hybridization", Clin. Chem., 39:718-719 (1993)

\*\*SHOEMAKER et al., "Quantitative phenotypic analysis of yeast deletion mutants using a highly parallel molecular bar-coding strategy," Nature Genetics, 14:450-456 (1996).

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ZHANG, et al, "Amplification of target-specific, ligation-dependent circular probe", Gene, 211:277-285 (1998)

All of the above documents are also listed on the accompanying Form PTO/SB/08a. Pursuant to 37 CFR 1.98, applicant has not submitted copies of the listed U.S. patents. In accordance with 37 C.F.R. § 1.98 (d), copies of the documents with double asterisks (\*\*), all of which were made of record in U.S. Patent Application No. 09/999,362, from which priority is claimed under 35 U.S.C. § 120, are not submitted herewith. Copies of the aforementioned foreign patent publications and other documents that were not previously made of record, are enclosed herewith.

It is respectfully requested that these documents be (1) fully considered by the Patent and Trademark Office during the examination of this application; and (2) printed on any patent that may issue on this application. Applicants request that a copy of Form PTO/SB/08, as considered and initialed by the Examiner, be returned with the next communication.

An early and favorable action is respectfully requested.

Respectfully submitted,



David A. Roise  
Registration No. 47,904  
Attorney for Applicants

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